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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/508,073	03/13/2000	KIYOFUMI INANAGA	6715/59253	9838

7590

08/27/2004

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EXAMINER
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PENDLETON, BRIAN T

ART UNIT	PAPER NUMBER
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2644

DATE MAILED: 08/27/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

**Application No.**

09/508,073

**Applicant(s)**

INANAGA, KIYOFUMI

**Examiner**

Brian T. Pendleton

**Art Unit**

2644

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 13 September 2000.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 9-16 is/are allowed.
- 6) ☐ Claim(s) \_\_\_\_\_ is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 13 March 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)             | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                                    |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1 and 5 are rejected under 35 U.S.C. 102(b) as being anticipated by Ono, Japanese Publication Number JP5-260024, of which a computer generated English translation is supplied. Ono discloses a digital data transmission system comprising signal source 1, compressor 11, transmit data create circuit 12, address generation circuit 13, sending circuit 14 and light emitting part 15. Compressor 11 reads on “a memory for temporarily writing digital audio signals inputted thereto and for repeatedly implementing time axis compression processing every unit time period to the written digital audio signals to write and read them for a second time” as described in paragraph 13, whereby the memory is inherent. Paragraph 14 stipulates that the sending circuit 14 accomplishes modulation which reads on “a modulation circuit”. Light emitting part 15 reads on “an infrared light emitting element”. Claim 1 is met. Per claim 5, compressor 11 is the memory, sending circuit 14 is the modulation circuit, light emitting part 15 is the infrared light emitting element and the reproducing apparatus shown in drawing 2 discloses infrared light sensing portion 21 (light receiving element), receiving circuit 22 (demodulation circuit), and RAM 23 and bit expanding circuit 25 (memory adapted for time axis expansion). Inherently since the signals are supplied to a headphone unit, there exists a D/A converter circuit and electroacoustic converting unit.

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 2, 4, and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ono in view of Anderson et al, US Patent 5,406,634. Ono discloses circuit 12 which adds address data to the audio data which is sent to the modulation circuit 14. Ono does not disclose data for identifying a headphone device in advance which receives the modulated audio signal is added to the audio signal (designating the headphone device for receiving the signal). Anderson discloses a loudspeaker system comprising a plurality of speakers 22, digital audio control and data line 24 and control board 11 coupled to audio sources. As taught in the abstract, control data is transmitted with the audio data. The control data contains an address to select the appropriate speaker unit. Thus, Anderson discloses adding data for identifying a speaker device. It would have been obvious to one of ordinary skill in the art at the time of invention to apply the teachings of Anderson in the invention of Ono for the purpose of specifically indicating which headphone device is set to receive the modulated audio signal which adds flexibility to the system.

5. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ono in view of Matsuo et al, US Patent 6,553,121. Ono does not disclose a channel converting circuit for converting audio signals of multi-channel structure into digital audio signals of 2 channels and a sound field converting circuit for implementing signal processing of head portion transfer

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function from two electroacoustic conversion units up to both ears of the listener. Matsuo discloses a three-dimensional acoustic processor 28 in figure 35 comprising a channel converting circuit 35, 37 and sound field converting circuit 36, 38 for processing the digital signals output from circuits 35 and 37 in order to create a localized signals for headphone output. It would have been obvious to one of ordinary skill in the art at the time of invention to use the signal processing of Matsuo in the invention of Ono for the purpose of localizing the signal source 1 outside the head of a headphone user creating a three-dimensional realistic sound environment.

6. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ono in view of Yamada et al, US Patent 6,021,205. Ono does not disclose the received digital signals are converted into audio signals of 2 channels in which a sound image is localized based on a head portion transfer function from two electroacoustic conversion units up to both ears of a listener and a time difference addition circuit, level difference addition circuit and detecting means for detecting a direction of the head of the listener to control the time difference and level difference circuits. Yamada discloses in figures 1 and 2 digital signals converted into audio signals of 2 channels for sound image localization based on a head portion transfer function via DSP 4 which contains filters 16, 17, 18 and 19. In addition, Yamada disclose time difference addition circuits 22, 23, level difference addition circuits 24, 25 and detecting means 8 connected to headphones 7. As was well known, the advantage of the digital signal processing in DSP 4 was to localize the sound source signals outside of the head of the headphone user creating a more realistic listening environment. The benefit of the detecting means, and level and time difference addition circuits was to compensate the sound output for movements of the head of the headphone user that would be heard when using a loudspeaker that an ordinary headphone

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system would not reflect. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to use the digital signal processing and detecting means of Yamada in the invention described by Ono for the purpose of improving the realism of acoustic output.

7. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ono in view of Yamada as applied to claim 7 above, and further in view of Anderson. The combination of Ono and Yamada does not disclose data for designating the headphone device for receiving the transmitted audio signal so that processing of the received signal can be made only where the data is in correspondence with a designated select condition is added to the audio signal.

Anderson discloses a loudspeaker system comprising a plurality of speakers 22, digital audio control and data line 24 and control board 11 coupled to audio sources. As taught in the abstract, control data is transmitted with the audio data. The control data contains an address to select the appropriate speaker unit. Thus, Anderson discloses adding data for identifying a speaker device. It would have been obvious to one of ordinary skill in the art at the time of invention to apply the teachings of Anderson to the combination of Ono and Yamada for the purpose of specifically indicating which headphone device is set to receive the modulated audio signal which adds flexibility to the system.

***Allowable Subject Matter***

8. Claims 9-16 are allowed.

***Conclusion***

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Han, US Patent 5,483,367; Chaki, US Patent 5,602,669.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian T. Pendleton whose telephone number is (703) 305-9509. The examiner can normally be reached on M-F 7-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Forester W. Isen can be reached on (703) 305-4386. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
btp